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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/050,210 | 01/15/2002 | Guy-Paul Alix | 16721-106 | 6284 |
| 32300 | 7590 | 12/14/2004 | EXAMINER | |
| BRIGGS AND MORGAN, P.A. | | | BHAT, NINA NMN | |
| 2200 IDS CENTER | | | ART UNIT | |
| MINNEAPOLIS, MN 55402 | | | PAPER NUMBER | |
| | | | 1764 | |

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,210

Applicant(s)

ALIX ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4-29-02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claim 1 is objected to because of the following informalities: In claim 1, applicant uses linking terms in order to describe the type of enclosed space and recites an air conditioning system, "particularly" an air conditioning system aboard an aircraft.

Applicant is suggested to draft claims without using linking terms or terms which include "in particular", "such as" etc. Appropriate correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Douwens et al.

Douwens et al. teaches a thermo chemical heat source, which is rectangular in form, the thermo chemical heat packs are disposed within the rectangular container. Surrounding the heat packs is a wrapping of wettable, absorbent material, such as woven or non-woven fabric. The purpose of the fabric is to maximize heat transfer and

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to provide water for the humidification of the air. Also disposed within the passageways are outer loose fillings of a permeable having a large surface area having high heat capacity and high conductive such as matted metal strands, this material heats rapidly and efficiently transfer heat to the air which passes through the device providing warmed and humidified air. The water-saturated fabric surrounding the thermochemical heat packs is saturated with water. Douwens teach that re-wetting means, which are not shown, are provided for the replacement of water evaporated from the fabric material. The system causes water to evaporate into the warmed air, which greatly increases its heat content.

However, Douwens et al. does not specifically recite that the device is capable of humidifying the air treated in an air conditioning system particular aboard an aircraft, nor the pressure safety valves or the specific reagents used in the thermochemical reactor or packs as claimed and that the device is connected to an air conditioning system.

With respect to providing the specific chemicals of calcium chloride, expanded graphite and ammonium gas to provide the exothermic reaction, these limitations would have been obvious to one having ordinary skill in the art because Douwens et al. teaches that thermochemical heat packs are described in Canadian Pat No. 1,010,331 and 1,124,140, Canadian Patent 1,010,331 which corresponds to US 3,976,049 teach providing an exothermic mixture consisting of iron powder, pig iron, with chlorides and sulphates of metals such as magnesium chloride, potassium chloride, etc and can further include a catalyst, to provide an exothermic reaction which is capable of providing a thermochemical reaction would have been obvious and to select the

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magnesium chloride, graphite and ammonia for reaction would have been obvious as has been taught in Douwens et al as evidenced by the Canadian Patents relied upon by Douwens et al.

The limitations of that the device is intended to humidify the air in an enclosed space or the air treatment in an air conditioning system in particular in a air conditioning system aboard an aircraft, are not positive limitations for the device it is the intended use of the device. Douwens et al. teach as apparatus which is capable of humidifying air using a thermochemical reactor or heat exchanger which provides heat by exothermic reaction which will heat the water which is on the fabric wettable wrapping absorbent material which is encased around the thermochemical heat source, further included in the device of Douwens et al. are high heat capacity porous air permeable material which comprises matted strands of metals which are heated and maintains heat generated from the thermochemical packs both humidify and heat the air and would function equivalently to the steam generating device as claimed by applicant. With respect to the specific limitations in claim 7 that the free end of the system opening into a duct of an air conditioning system, this would have been obvious to one having ordinary skill in the art from reading Douwens et al. because Douwens teach a heat exchanger which includes an insulated container which has air inlet and air outlet means, a thermochemical heat source disposed within the core of the container the thermochemical heat source delineated two boundaries, a wettable absorbent material which is encased around the thermochemical heat source, and also means to include a loose filing of porous air-permeable material having high heat capacity and high heat

conductive which is disposed in the inlet passages and provides air passageways wherein air from the inlet flows through the inside of the container through delineated passageways which contact the wettable fabric thereby providing heated and humidified air which is passed out of the container through the outlet. To connect the inlet and outlet to ducts of an air conditioning system and to include safety valves and features to prevent over pressures etc. would have been obvious to one having ordinary skill in the art as heat exchangers can generically be an air conditioner but it is well established in the HVAC art to provide both heat exchange, air-conditioning and humidification to the air. It is maintained that the using a thermochemical reactor for generating an exothermic reaction for humidification of air has been taught and suggested by Douwens et al. thus rendering applicant's invention as a whole obvious.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Khelifia et al. teach an apparatus for heating and/or cooling a cabin. Basu et al. teach a method of generating power using an advanced thermal recuperation cycle.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat
Primary Examiner
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